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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,798	01/29/2004	Neil G. Murray JR.	TRW(TE)6888	7228

7590 02/07/2005
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EXAMINER

VERBITSKY, GAIL KAPLAN

ART UNIT	PAPER NUMBER
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2859

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/767,798

Applicant(s)

MURRAY ET AL.

Examiner

Gail Verbitsky

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>01/29/2004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 7, 9, 13-16, 18, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Shepard (U.S. 6585146).

Shepard discloses in Fig. 1 a device/ method for monitoring quality of weld 106 being formed between first and second pieces (surfaces) 104 a and 104b of a material 104, the method comprising the steps of heating the material 104 and the weld 106 with a heating source 102, collecting an infrared radiation (infrared wavelengths) passing through the material on the second surface 104b, obtaining an image (plurality of images) by a camera 108, and analyzing the image by a computer 112. It is inherent, that the camera captures the weld/ weld pool image in its entirety (thermal image/ temperature of each portion of the weld pool).

For claims 4-5: it is inherent that, using an infrared camera and obtaining a thermal image, the device is capable to determine temperature of each portion of the weld reflecting in pixels. The temperature and corresponding time (histogram) is compared to a threshold histogram (col. 1, lines 37-56, col. 5, line 48 and col. 8, lines 10-15).

For claims 7 and 9: the invention can determine both the size (thus, inherently, width) of the weld and the quality (presence of cracks, voids, defects, discontinuities) of the

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bond (col. 7, lines 1-2) and, inherently, compare them to the threshold by means of the histogram.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 12 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shepard in view of Kearney (U.S. 4446354).

Shepard discloses a device/ method as stated above in paragraph 2.

Shepard does not explicitly teach an alarm.

Kearney discloses a device in the field of applicant's endeavor. A radiation received from a weld 18 is sent (feedback) to a weld controller 30, which activates an alarm in response to determining that the difference between the received signal and the reference signal values exceeds a pre-selected (threshold) limit (does not meet an associated criterion). The alarm can interrupt the device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Shepard, so as to have an alarm, as taught by Kearney, in order to enable the device to interrupt welding should a failure occurs.

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5. Claims 6, 8, 10-11, 17, 19, 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shepard in view of Traub et al. (U.S. 4214164) [hereinafter Traub].

Shepard discloses a device/ method as stated above in paragraph 2.

Shepard does not explicitly teach a weld controller.

Traub teaches a device / method in the field of applicant's endeavor wherein, in an automatic mode, a thermal signal from a weld is compared to a signal recorded in memory (reference/ threshold), if the signal is higher or lower than the reference (does not meet an associated criterion), welding parameters are being adjusted by a (feedback) control circuitry (weld controller).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Shepard, so as to have a feedback weld controller, as taught by Traub, in order to enable the device not only to detect failure but also to implement corrective functions.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Any inquiry concerning this communication should be directed to the Examiner Verbitsky who can be reached at (571) 272-2253 Monday through Friday 8:00 to 4:00 ET.

GKV

Gail Verbitsky

Primary Patent Examiner, TC 2800



February 03, 2005